



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,364	03/01/2004	Jingfei Ma	GEMS8081.212	9332

27061 7590 09/17/2004

ZIOLKOWSKI PATENT SOLUTIONS GROUP, LLC (GEMS)
14135 NORTH CEDARBURG ROAD
MEQUON, WI 53097

EXAMINER

CHOOBIN, BARRY

ART UNIT	PAPER NUMBER
----------	--------------

2625

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/790,364

Applicant(s)

MA ET AL.

Examiner

Barry Choobin

Art Unit

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32-51 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 32-34, 37-41, 43, 44 and 47-50 is/are rejected.
- 7) ☒ Claim(s) 35, 36, 42, 45, 46 and 51 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date June 9, 2004.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on June 9, 2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Applicant's request for entry and consideration of claims 32-51 newly presented and canceling claims 1-31 on March 1, 2004 is acknowledged and granted.

Accordingly claims 32-51 are now pending.

Applicant's claiming priority of 09/681,472 filed April 13, 2001 is acknowledged.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 32-34, 37-41, 43-44 and 47-50 are rejected under 35 U.S.C. 102(e) as being anticipated by Sodickson (US 6,717,406)

As to claim 32, Sodickson discloses a method of automatically selecting

Art Unit: 2625

MR data for image reconstruction comprising the steps of (column 13, lines 18-30):
acquiring MR data from each of a plurality of receiver coils (column 8, lines 3-9);
reconstructing a plurality of images from the MR data, each image having
a measurable sensitivity to a desired FOV (column 8, lines 10-19);
comparing the sensitivities of the plurality of images (fig.14a-14b); and
combining those of the plurality of images having a sensitivity to the
desired FOV that exceeds a threshold to form a composite image (column 8, lines 20-42).

As to claim 33, Sodickson discloses the method of claim 32 (see above) wherein the plurality of receiver coils include a phased array coil assembly of a medical imaging scanner and further comprising the steps of:
projecting a measured sensitivity value for each of the plurality of images onto an axis of the MR coils (column 25, lines 59-67) and conducting a profile fit to determine coil sensitivity to the desired FOV (column 13, lines 18-30); determining a peak location of the profile along the axis of the receiving coils (fig.2 and 3); and using those images within a pre-set standard deviation of the peak for combining into the composite image (column 18, lines 52-64).

As to claim 34, Sodickson discloses the method of claim 32 (see claim 32) further comprising the step of determining an integration of a coil sensitivity profile weighted by a spin density of a scanning subject over the desired FOV for each receiver coil (column 23, lines 51-56).

Art Unit: 2625

As to claim 37, Sodickson discloses the method of claim 32 (see claim 32) wherein each step is performed automatically by a computer system, without a hardware landmark, and without user input 9see abstract wherein in line 10 discloses an automatic selection and tailoring).

As to claim 38, Sodickson discloses the method of claim 32 (see claim 32 above) wherein the desired FOV spans a region of-interest less than a maximum coverage of the plurality of receiver coils.

As to claim 39, Sodickson discloses an MRI apparatus to reduce artifacts in reconstructed images comprising:
a magnetic resonance imaging (MRI) system having a plurality of coils positioned about a bore of a magnet to impress a polarizing magnetic field and an RF transceiver system and an RF switch controlled by a pulse module to transmit and receive RF signals to and from a multi-coil RF coil assembly to acquire MR images (fig.1); and
a computer programmed to (fig.24): acquire MR images from each coil of the multi-coil RF coil assembly from across an image FOV (see claim 32);
determine an intensity value for each MR image (fig.11b);
display an intensity map of the intensity values of the MR images (fig.1, display 18a)',
and allow an operator to select images from the map for inclusion into a composite image of the image FOV.

Art Unit: 2625

As to claim 40, Sodickson discloses MRI apparatus of claim 39 (see claim 39 above) wherein the computer is further programmed to reconstruct a final image by combining the images selected by the operator (column 8, lines 20-30).

As to claim 41, Sodickson discloses the MRI apparatus of claim 39 (see claim 39) wherein the computer is further programmed to determine a coil position relative to the image FOV for each of the coils from the intensity values of the MR image (column 15, lines 7-15).

Claims 43, 44, 47, 48, 49 and 50 are similarly analyzed and rejected.

Allowable Subject Matter

4. Claims 35, 36, 42, 45, 46 and 51 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

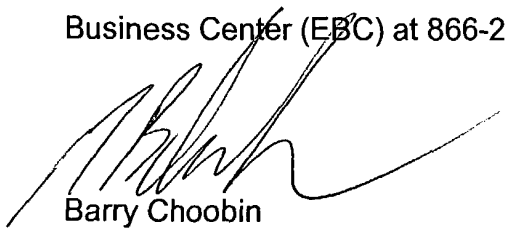
CONTACT INFORMATION

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Choobin whose telephone number is 703-306-5787. The examiner can normally be reached on M-F 7:30 AM to 18:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on 703-308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2625

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Barry Choobin
September 15, 2004